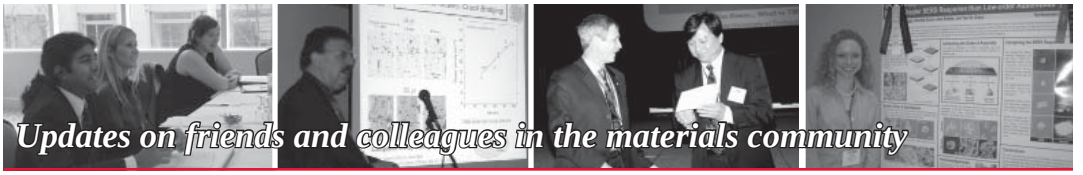

3D Materials Science Conference Slated

The TMS Board of Directors recently approved the 2012 International Conference on 3D Materials Science as a TMS-sponsored specialty meeting. The conference will take place from July 8 to 12, 2012 at Seven Springs Mountain Resort, Pennsylvania. It is sponsored by the TMS Advanced Characterization, Simulation & Testing Committee of the Structural Materials Division.

The first TMS specialty conference of its kind, the event will provide a premier forum for presentations of current interest and significance to the three-dimensional (3D) characterization, visualization, quantitative analysis, modeling, and discovery of structure-property relationships of materials. The learning environment is also being designed to facilitate interaction and knowledge exchange among participants for the purposes of assessing the state-of-the-art within 3D materials science and identifying key areas of future research.

The lead organizer for the conference is Alexis Lewis, U.S. Naval Research Laboratory. Other members of the conference organizing team are: Marc De Graf, Carnegie Mellon University; Henning Poulsen, Risø National Laboratory and DTU, Denmark; Jeff Simmons, U.S. Air Force Research Laboratory; George Spanos,TMS. Watch for additional details in future issues of *JOM* and other TMS member communications.

Sandip Harimkar Honored by The Society of Manufacturing Engineers

Sandip P. Harimkar, assistant professor in the School of Mechanical and Aerospace Engineering, Oklahoma State University, has been named a recipient of the 2011 Society of Manufacturing Engineers (SME) Outstanding Young Manufacturing Engineer Award. This award recognizes manufacturing practitioners who have made exemplary contributions and achievements in the manufacturing industry. Harimkar's research interests encompass advanced processing and characterization of materials, with emphasis on investigating the mechanisms of micro/nanostructure evolution and its influence on properties. He currently chairs the TMS Surface Engineering Committee and received a Young Leader Professional Development Award in 2010 from the TMS Materials Processing & Manufacturing Division.

Leadership Training Available "On Demand"

The Emerging Leaders Alliance (ELA) has been providing comprehensive leadership development experiences to the engineering and scientific community since 2008. TMS members now have the opportunity to access these learning opportunities at their convenience through ELA on Demand.

ELA on Demand now offers an online library of recorded educational sessions presented at the 2010 ELA Capstone Workshop. Each recording has been audio synchronized with its relevant PowerPoint presentation. Available topics include: Conflict Resolution and Change Management; Critical Thinking and Problem Solving; E-mail Management; Global Team Leadership; Leveraging Multiple Generations in the Workplace; Managing Global/Cross-Disciplinary/Virtual Teams; Motivation; Passion and ICE (Integrity, Courage, and Empathy); Risk Management; Social Styles/Personality Assessment; Traits of Leadership.

The ELA on Demand website can be accessed at *http://ela.sclivelearningcenter.com*. Each recorded session can be purchased individually for $69. The entire 11-session set is available for $499.

The Emerging Leaders Alliance is supported by the United Engineering Foundation and is organized by partner engineering societies.

In Memory of Herbert Eiselstein, Inventor of Superalloy 718

TMS extends its condolences to the family and friends of Herbert Lewis Eiselstein, who passed away in May in Huntington, West Virginia, at the age of 93. A member of TMS since 1972, Eiselstein worked his entire career at Inco Alloys International and retired as vice president of Technology, Research and Development.

Eiselstein authored numerous publications dealing with alloying effects, heat treatment, and physical metallurgy of superalloys. He is also credited with an array of patents, including those for Inconel 718, Inconel 625, Inconel 903, Inconel 617, Monel 502, Incoloy 840, Inconel 601, Incoloy 802, Inconel 706, and Inconel 618. His development of Inconel 718 ranks as his paramount achievement in the area of superalloys. The introduction of superalloy 718 at the Pratt and Whitney and General Electric jet engine divisions in the early 1960s represented a significant advance in gas turbine engine technology, enabling the manufacture of engines with lower cost, lighter weight, and simplified construction. 718 has subsequently become one of the most widely used superalloys for aerospace applications and continues to be a key component of military and aircraft engines 50 years after Eiselstein invented it.

The 1988 International Symposium on Superalloys and the 1989 Symposium on Superalloy 718, both held at Seven Springs Mountain Resort, Pennsylvania, were dedicated to recognizing Eiselstein's contributions in alloy design, development, and processing.

Meet a Member: John Smugeresky Presents Possibilities to Local College Students

By Lynne Robinson

LENS 001, which John Smugeresky helped develop (right) was recently moved to Las Positas College (left) where it will introduce a new generation to advanced metal joining and additive manufacturing principles.

John E. Smugeresky, of Sandia National Laboratories, in Livermore, California, is using a piece of manufacturing history to help build the technologically proficient workforce needed for the future.

Smugeresky had been guest lecturing at Las Positas College, located a few miles from Sandia, for several years on a direct manufacturing technology that he had helped develop in the 1990s. Known as Laser Engineered Net Shaping, or LENS®, the process, Smugeresky explained, uses a layer-by-layer additive approach to "literally 'grow' near-net shape pieces by rastering a laser beam and a metal powder particle stream to deposit thin layers of material" until the part is completed. "It's a kind of a precursor to the replicator from *Star Trek* lore," said Smugeresky.

Explaining this technology to a class is one thing. Giving students hands-on learning opportunities with it offers a much richer educational experience that can shape career path decisions. So, when Smugeresky learned that Sandia was looking for a new home for the first-ever LENS machine that he had assisted in creating in 1994, he was more than pleased to contact the Las Positas faculty with a suggestion that the historic device be used as a teaching tool for metal joining and additive manufacturing.

"The technology is not antiquated at all and continues to be used in metallurgy and microstructure evaluation, as a metal-joining technique, and as a research tool," said Smugeresky.

In part through Smugeresky's efforts, the LENS unit bearing serial number 001 was transferred from Sandia to the Las Positas campus in March through the U.S. Department of Energy's Energy-Related Laboratory Equipment (ERLE) program. The ERLE grants available excess or used energy-related laboratory equipment to educational facilities. "This is important in these tough economic times, when educational institutions are being asked to cut their budgets and students don't have resources to pay higher tuition fees," said Smugeresky.

Smugeresky brought his extensive powder metallurgy expertise to the team that put LENS 001 together at the Sandia Laboratory in New Mexico nearly two decades ago. The technology was ultimately licensed to Albuquerque-based Optomec and commercial machines are now operating throughout the world. "While the technology was first used to make near-net shape metal parts faster and cheaper, it is also employed by academia for alloy development and for repair of damaged or worn high-value metal components, such as turbine blades and large rotating mining shafts," said Smugeresky.

The working volume for making parts in LENS 001 is rather small compared to current commercially available models. Its size, noted Smugeresky, makes it ideal for teaching metal deposition fundamentals, while its roots in metal joining enables a compelling introduction to high-tech laser welding principles.

Smugeresky is working with the Las Positas faculty to get LENS 001 up and running and will also develop a materials-based additive manufacturing and welding class for him to teach once the technology has been incorporated into the curriculum. He is hopeful that the technology he contributed to years ago can be used to inspire students to explore materials and processes that will be important to future industries.

"A goal for using this as a tool in the college's welding program is to help change the classic field welder image of burly men in face shields and steel-toed boots, working in a dirty, industrial environment," said Smugeresky. "While the LENS technology utilizes a small melt pool in the same way as a welder, the welding is done in a glove box using a high-powered laser to create a specific three-dimensional shape from a computer-aided design model. Emphasizing this high-tech, laboratory approach will hopefully influence students, particularly women, to consider materials science and engineering related career opportunities."

Each month, *JOM* profiles a TMS member and his or her activities both in and out of the realm of materials science and engineering. To suggest a candidate for this feature, contact Maureen Byko, *JOM* editor, at *mbyko@tms.org.*